Smart surveys – theory & practice

How to incorporate smart surveys into data collection?

Geneva – Palais des Nations
Jelmer de Groot – May 24th
What is this session about?

- Smart Surveys in theory
- Smart surveys in practice: mobility & HBS
- How to implement smart surveys?
- Discussion
Smart Surveys in theory

- Device intelligence: It can use the intelligence (computing, storage) of the device
- Internal sensors: It can employ the sensors available in the device;
- External sensors: It can communicate with other sensor systems;
- Public online data: It can extract publicly available online data;
- Personal online data: It can go online and request access to existing external personal data;
- Linkage consent: It can ask consent to link external personal data already in possession of the survey institute.
Smart Surveys in theory

- Device intelligence $\rightarrow$ Computations, OCR, classification
- Internal sensors $\rightarrow$ Camera, GPS
- External sensors $\rightarrow$ n/a
- Public online data $\rightarrow$ Open streetmaps
- Personal online data $\rightarrow$ Bank transaction/digital receipts
- Linkage consent $\rightarrow$ Scanner data
Smart Surveys in practice

- 2 case studies: mobility & HBS
- App development funded by Eurostat
- Exploring data collection approach strategies
Smart surveys in practice: Mobility app
Original design of mobility survey

- Questionnaire
- 1 day diary: activity based
- Invitation letter + 2 reminders
- Response target: 23.1%
- Sample size: 198,527
New design: smart survey

- App-based
- Diary that fills itself based on GPS
- User can adjust
- Invitation letter + 2 reminders
What does it look like?
2022: field test

- Experimental conditions:
- 1 vs 7 day reporting period
- Option for CAWI questionnaire on invitation, 1\textsuperscript{st} reminder or 2\textsuperscript{nd} reminder
- 10 euro incentive vs. lottery on CAWI
Results – response rates
## Results

- **1 day vs. 7 days**
- **CAWI option**

<table>
<thead>
<tr>
<th></th>
<th>Number of days</th>
<th>Questionnaire option</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>1 day</td>
<td>7 days</td>
</tr>
<tr>
<td>App response</td>
<td>133 (10.6%)</td>
<td>159 (12.8%)</td>
</tr>
<tr>
<td></td>
<td>90 (10.8%)</td>
<td>103 (12.3%)</td>
</tr>
<tr>
<td></td>
<td>99 (12.0%)</td>
<td></td>
</tr>
<tr>
<td>Questionnaire response</td>
<td>83 (6.6%)</td>
<td>95 (7.6%)</td>
</tr>
<tr>
<td></td>
<td>83 (10.0%)</td>
<td>60 (7.2%)</td>
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<tr>
<td></td>
<td></td>
<td>35 (4.2%)</td>
</tr>
<tr>
<td>Total response</td>
<td>210 (16.8%)</td>
<td>249 (20.0%)</td>
</tr>
<tr>
<td></td>
<td>168 (20.1%)</td>
<td>157 (18.8%)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>134 (16.2%)</td>
</tr>
</tbody>
</table>
## Results

- Which condition works best?

<table>
<thead>
<tr>
<th></th>
<th>1 day, CAWI on invitation</th>
<th>7 days, CAWI on invitation</th>
<th>1 day, CAWI reminder 1</th>
<th>7 days, CAWI reminder 1</th>
<th>1 day, CAWI reminder 2</th>
<th>7 days, CAWI reminder 2</th>
</tr>
</thead>
<tbody>
<tr>
<td>App</td>
<td>42 (10.0%)</td>
<td>48 (11.6%)</td>
<td>50 (12.0%)</td>
<td>53 (12.7%)</td>
<td>41 (9.9%)</td>
<td>58 (14.0%)</td>
</tr>
<tr>
<td>CAWI</td>
<td>36 (8.6%)</td>
<td>47 (11.4%)</td>
<td>29 (6.9%)</td>
<td>31 (7.5%)</td>
<td>18 (4.4%)</td>
<td>17 (4.1%)</td>
</tr>
<tr>
<td>Total</td>
<td>76 (18.1%)</td>
<td>92 (22.3%)</td>
<td>75 (17.9%)</td>
<td>82 (19.7%)</td>
<td>59 (14.3%)</td>
<td>75 (18.1%)</td>
</tr>
</tbody>
</table>
Mixed feelings

- How to further improve response rates?
- Further research: communication materials
Case study 2: Household Budgey Survey
Background

- Household budget survey
- Current approach; P&P diary
- Incentives (5 euro – 30 euro)
- Response rate 2020: 13.4%.
- 2026: smart HBS
Smart HBS?

- Respondent burden & improved user experience
- Data quality
- Implementation of smart features
- Interchangeability between countries
Household Budget Survey app

- Screenshots of Dutch version
Household Budget Survey app

- Smart feature: OCR scanning
HBS - field test in september 2021
Field test – September 2021

- Interviewer yes/no
- Paradata analyses
- Insights page
- OCR scanning
Field test; design

- Spain (N = 866) & Netherlands (N = 1.485)

- Interviewer (N = 1.118) vs. letter (N = 1.233)

- Incentive: NL 5 – 20 euro
Results – response rates
## Results

- **Overall response & representativeness**

<table>
<thead>
<tr>
<th></th>
<th>Registration</th>
<th>Active</th>
<th>Complete</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Interviewer:</strong></td>
<td>26.6%</td>
<td>24.2%</td>
<td>20.7%</td>
</tr>
<tr>
<td><strong>Letter:</strong></td>
<td>14.3%</td>
<td>11.4%</td>
<td>9.2%</td>
</tr>
<tr>
<td><strong>Insights instant:</strong></td>
<td>18.0%</td>
<td>15.7%</td>
<td>13.0%</td>
</tr>
<tr>
<td><strong>Insights delayed:</strong></td>
<td>21.2%</td>
<td>18.3%</td>
<td>15.3%</td>
</tr>
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</table>
Next steps: 2024 and further

- September 2024: next fieldtest
- Improved functions of the app
- Implementation of questionnaire
- Both interviewer and non-interviewer group
  - High chance of participation vs. lower chance
  - Role of interviewer
- Towards fieldwork in 2026
Sneak preview: new version of the app
Is the future really here?

- Difficulties with approach strategy
- Further research needed
- Promising tools
Questions/discussion
Facts that matter